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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/783,323	02/15/2001	Kenichi Sawada	325772022400	3172

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EXAMINER

BURLESON, MICHAEL L

ART UNIT	PAPER NUMBER
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2625

DATE MAILED: 12/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/783,323

Applicant(s)

SAWADA ET AL.

Examiner

Michael Burleson

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 09/12/2006 have been fully considered but they are not persuasive.
2. Applicant states that the reference of Haneda fails to teach of an input device for inputting distortion data of the exposure unit of an image forming device (remarks page 6). Examiner disagrees with Applicant. Applicant states that he fails to see how the registration sensing means of Haneda can be an input device of any kind, that information is not input to the registration means (remarks page 6). The registrations means (RS) is an input device because the sensors sense the registration pattern between the exposure optical system (column 9, lines 18-23). This information and the image deviation are sent to the control section (251) for correction (column 9, lines 50-56). Therefore, the registration means (RS) acts as an input device for inputting information to the control section (251). Regarding claim 3, Applicant states that the LED exposure of optical system (12) is not arranged in a straight line. Examiner disagrees with Applicant. Haneda teaches that the LED array is divided into plural exposure units in a linear direction (column 7, lines 65-67). This reads on the LED exposure of the optical system being arranged in a straight line.
1. Regarding claim 4, Applicant states that Haneda fails to teach the input device is an operation panel operated by a user and that Haneda does not teach of inputting

distortion data of the exposure unit (remarks page 7). Examiner disagrees with Applicant. Haneda teaches that deviation data of the exposure means is outputted to the control section (201) and this information can be adjusted (column 6, lines 55-67). Since the registration means (RS) senses registration pattern and deviation, this shows that the registration means (RS) and control section (201) correspond with each other.

2. Regarding claim 5, Applicant states that Haneda fails to teach the input device is equipped with plural kinds of input methods (remarks page 7). Examiner disagrees with Applicant. The registration means (RS) contain image sensor (RS1), which uses infrared light (column 9, lines 33-35) and light-emitting element (RS3), which uses reflected light (column 9, lines 36-40). Haneda also talks about the preferred sensing method (image sensor (RS1)) and an alternative use (light-emitting (RS3)). This would read on input device is equipped with plural kinds of input methods.

3. Rejection of claims 1-15 is maintained.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Haneda US 6011575.

2. Regarding claim 1, Haneda teaches of an exposure optical system (12) composed of an LED array arranged in the axis direction of photoreceptor drum (10) (column 4, lines 1-7), which reads on an image forming apparatus comprising: an exposure unit which exposes an image carrier by emitting light of light emitting elements based on image data. Haneda teaches of a registration sensing means (RS) (column 9, lines 10-15, 18-35 and 52-56), which reads on an input device for inputting distortion data of the exposure unit. Haneda teaches of a control section (251) (column 9, lines 52-56 and 14-25 and column 10, lines 20-25), which reads on a controller, which controls an exposure position of an image to be exposed by the exposure unit, based on the input distortion data.
3. Regarding claim 2, Haneda teaches of an exposure optical system (12) composed of an LED array arranged in the axis direction of photoreceptor drum (10) (column 7, lines 65-67), which reads on the exposure unit includes a plurality of the light emitting elements that are arranged in a line.
4. Regarding claim 3, Haneda teaches that the LED array provides image exposure (column 7, lines 29-32), which reads on data corresponding to each of the light emitting elements are input.
5. Regarding claim 4, Haneda teaches of image information being inputted from outside the apparatus (column 6, lines 21-24), which reads on the input device is an operation panel operated by the user.
6. Regarding claim 5, Haneda teaches that the registration sensing means (RS) consists of image sensor (RS1), image forming lens (RS2) and LED (RS3) (column

9,lines 25-35), which reads on the input device is equipped with plural kinds of input methods.

7. Regarding claim 6, Haneda teaches of an exposure optical system (12) composed of an LED array arranged in the axis direction of photoreceptor drum (10) (column 4,lines 1-7), which reads on an image forming apparatus comprising: an exposure unit which exposes an image carrier by emitting light of light emitting elements based on image data. Haneda teaches of a transfer device (14A) (column 5,lines 33-37), which reads on a transfer unit which transfers a latent image created on said image carrier as a revealed image onto a transfer body. Haneda teaches of a registration sensing means (RS) (column 9,lines 10-15, 18-35 and 52-56), which reads on an input device for inputting distortion data of the exposure unit. Haneda teaches that image sensor (RS1) and light emitting element (RS3) sense registration patterns (column 9,lines 34-43), which reads on at least two optical sensors which read out resist patterns formed on said transfer body. Haneda teaches of a control section (251) (column 8,lines 35-58, column 9,lines 52-56 and 14-25 and column 10,lines 15-25 and 20-25), which reads on a data processor which forms skew correction data based on a relative deviation amount in main and sub scanning directions of the exposure unit, that is obtained by a readout of the resist patterns by the optical sensors and a controller which controls an exposure position of an image to be exposed by the exposure unit, based on the input device and skew correction data.

8. Regarding claim 7, Haneda teaches of an exposure optical system (12) composed of an LED array arranged in the axis direction of photoreceptor drum (10)

(column 7, lines 65-67), which reads on the exposure unit includes a plurality of the light emitting elements that are arranged in a line.

9. Regarding claim 8, Haneda teaches that the LED array provides image exposure (column 7, lines 29-32), which reads on data corresponding to each of the light emitting elements are input.

10. Regarding claim 9, Haneda teaches that the registration sensing means (RS) is arranged at a predetermined distance in the main-scanning direction from a center position (figure 3), which reads on each of the optical sensors is arranged in a position at a predetermined distance in the main-scanning direction from a center position of the arrangement of the light emitting elements.

11. Regarding claim 10, Haneda teaches of an exposure optical system (12) composed of an LED array arranged in the axis direction of photoreceptor drum (10) onto recording paper (column 4, lines 1-7 and column 5, lines 3-45), which reads on an image forming apparatus comprising: an exposure unit which exposes a recording medium by emitting light of light emitting elements based on image data, thereby forming an image. Haneda teaches of RAM (253) (column 10, lines 15-18), which reads on a memory device, which stores distortion data of the exposure unit. Haneda teaches of a registration sensing means (RS) (column 9, lines 18-21), which reads on a resist pattern forming device which forms resist patterns on the recording medium. Haneda teaches that image sensor (RS1) and light emitting element (RS3) sense registration patterns (column 9, lines 34-43), which reads on sensors which read out resist patterns formed on said transfer body. Haneda teaches of a control section (251) (column

9, lines 52-56 and 14-25 and column 10, lines 15-25 and 20-25), which reads on a controller which determines recording positional deviation data of the exposure unit based on the read-out result of the resist patterns by the sensors, and controls exposure positions of the image to be exposed by the exposure unit based on the recording positional deviation data and distortion data.

12. Regarding claim 11, Haneda teaches of an exposure optical system (12) composed of an LED array arranged in the axis direction of photoreceptor drum (10) (column 7, lines 65-67), which reads on the exposure unit includes a plurality of the light emitting elements that are arranged in a line.

13. Regarding claim 12, Haneda teaches that the LED array provides image exposure (column 7, lines 29-32), which reads on data corresponding to each of the light emitting elements are input.

14. Regarding claim 13, Haneda teaches that the registration sensing means (RS) is arranged at a predetermined distance in the main-scanning direction from a center position (figure 3), which reads on each of the optical sensors is arranged in a position at a predetermined distance in the main-scanning direction from a center position of the arrangement of the light emitting elements.

15. Regarding claim 14, Haneda teaches of exposure units 12C, 12M, 12Y, 12K (figure 3), which reads on wherein a plurality of the exposure units are provided for forming color images. Haneda teaches of storing an image in memory (column 4, lines 29-33), which reads on wherein an image storage device for storing image data is further provided. Haneda teaches linearity is corrected and then registration patterns

are formed on the photoreceptor drum (10) by the registration sensing means (RS), which is taken from ROM (252) (column 8,lines 59-67 – column 9,lines 1-67), which reads on wherein the controller corrects linear distortion of the exposure units, using distortion data input from the input device, and then forms the resist patterns on the transfer body by means of the resist pattern forming device, to thereby relatively detect the positional deviation of the images in the exposure units with respect to the image in the reference exposure units with respect to the image in the reference exposure unit by means of the optical sensor device, and execute address control of the image storage device so as to correct the positional deviation of the images based on the detected result.

16. Regarding claim 15, Haneda teaches of correcting positional deviation of images (column 10,lines 2-25), which reads on wherein the controller corrects linear distortion of the exposure units, and thereafter corrects the positional deviation of the images.

17. Regarding claim 16, Haneda teaches of a registration sensing means (RS) (column 9,lines 10-15, 18-35 and 52-56), which reads on an input device for inputting distortion data of the exposure unit.

Conclusion

Any inquiry concerning this communication should be directed to Michael Burleson whose telephone number is (571) 272-7460 and fax number is (571) 273-7460. The examiner can normally be reached Monday thru Friday from 8:00 a.m. –

Art Unit: 2625

4:30p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached at (571) 272-7437.

Michael Burleson
Patent Examiner
Art Unit 2626

Handwritten signature of Michael Burleson, consisting of the letters 'MB' in a stylized, cursive font.

MIb
December 9, 2006

Handwritten signature of David Moore, written in a cursive script.

DAVID MOORE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800